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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,631	02/24/2005	Jorg Rosch	2002P09821WOUS	8341

7590 10/17/2006
Siemens Corporation
Intellectual Property Department
170 Wood Avenue south
Iselin, NJ 08830

EXAMINER

PAK, SUNG H

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/525,631

Applicant(s)

ROSCH ET AL

Examiner

Sung H. Pak

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/07/2006 has been entered.

Response to Amendment

Applicant's amendment filed 7/07/2006 effectively changes the scope of pending claims. Particularly, claims are amended to recite, inter alia, "... the multiplexer, the demultiplexer, the optical filter, the micro-electrical-mechanical system and the optical amplifier are *formed within at least one optical layer* of a multilayer printed circuit board..." (e.g. claim 9).

In response to the claim amendment, the previous ground of rejection is hereby withdrawn. However, the examiner respectfully submits that the pending claims are not in condition for allowance and a new ground of rejection is presented in this office action.

Although applicant's arguments for patentability of pending claims have been carefully studied by the examiner, they are considered moot in view of the new ground of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al (US 6,706,546 B2) in view of Huber et al (US 2003/0035613 A1).

Yoshimura reference discloses an optical device with nearly all limitations set forth in the claims, except it does not explicitly teach the use of a micro-electrical-mechanical system.

Specifically, Yoshimura discloses: a multiplexer and a demultiplexer (e.g. Fig. 122; 123; Col. 56, ll. 46- Col. 57, ll. 21); an optical filter (e.g. Fig. 74-81; Col. 25, ll. 18-45); an optical amplifier (e.g. Col. 27, ll. 25-55); wherein the multiplexer, demultiplexer, optical filter, and optical amplifiers are formed within at least one optical layers of a multiplayer electro-optic circuit board (Col. 2, ll. 24- Col. 3, ll. 12); the multilayer circuit board comprising at least one electrically insulating layer (e.g. Fig. 4-3: the body of the substrate), at least one electrically conducting layer on the upper surface (e.g. '27' Fig. 4-3), to which an electro-optic device is connected ('photodetector' Fig. 4-3), at least one optical layer ('waveguide' Fig. 4-3) beneath the at least one insulating layer; a connecting opening formed within the at least one optical layer (e.g. '456' Fig. 50-2), an optical coupling element within the connecting opening (e.g. '458' Fig. 50-2) whereby the electro-optic device is oriented above the optical coupling element so that an optical signal exiting the electro-optic device is redirected by the optical coupling element to an optical waveguide formed within the at least one optical layer whereby the optical waveguide carries the optical signal to the electrically controlled optical add-drop multiplexer (Col. 2, ll. 24- Col. 3, ll. 12);

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wherein a layer of the multilayer circuit board has both optical and electrical conductor paths (e.g. Fig.4-3);

wherein the multilayer circuit board has organic and inorganic materials (organic being polymers and inorganic being metallic conductors- Col. 2, ll. 53-65);

wherein the optical conductor paths are made of polymers (Col. 2, ll. 53-65);

wherein a plurality of optical conductor paths formed within the multilayer circuit board have 3 dimensional optical structures such that two optical conductor paths arranged in different layers of the multilayer circuit board are optical connected to one another (e.g. Fig. 24);

wherein the optical connector paths contain doping (Col. 27, ll. 25-55);

wherein the add drop multiplexer comprises an electro optic device, opto electronic device and an optical device (Col. 2, ll. 24- Col. 3, ll. 12).

On the other hand, the use of a Micro-Electro-Mechanical (MEMs) device for routing or switching optical signals in a planar waveguide circuit device is well known and common in the art. For example, Huber et al reference explicitly teaches the use of a MEMs switching reflector for routing optical signals propagating in a waveguide circuit device (Abstract; Fig. 5A). Such MEMs element is considered advantageous and desirable in the art because it provides an optical beam routing means capable of having more than one optical path, resulting in a more robust optical communications device. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Yoshimura to have a MEMs device as taught in Huber.

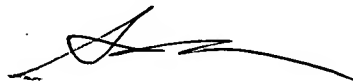
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sung H. Pak
Primary Patent Examiner
Art Unit 2874